



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,205	01/20/2004	Akira Hokazono	247866US2S	7742
22850	7590	02/23/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LOKE, STEVEN HO YIN	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

34

Office Action Summary	Application No. 10/759,205	Applicant(s) HOKAZONO ET AL.	
	Examiner Steven Loke	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2811

1. Claims 11-25 are objected to because of the following informalities: Claim 11, line 5, the phrase "the entire surface region", line 10, the phrase "the surface region" have no antecedent basis. Claim 13, line 3, claim 17, line 3, claim 21, line 3, the phrase "the surface" has no antecedent basis. Claim 14, lines 5, 7, the phrase "the surface" is unclear whether it is being referred to the surface region of claim 11. Claim 14, line 5, the phrase "opening portion" is unclear whether it is being referred to "an opening portion"; line 6, the phrase "contact liner film" is unclear whether it is being referred to the contact liner film of line 3, claim 14. Claim 15, line 10, the phrase "the surface region" has no antecedent basis. Claim 18, lines 6, 8, the phrase "the surface" is unclear whether it is being referred to the surface region of claim 15. Claim 18, line 6, the phrase "opening portion" is unclear whether it is being referred to "an opening portion"; line 7, the phrase "contact liner film" is unclear whether it is being referred to the contact liner film of line 3, claim 18. Claim 19, line 5, the phrase "n-type diffusion region" is unclear whether it is being referred to "an n-type diffusion region"; lines 5-6, 8, the phrase "the surface portion" has no antecedent basis; line 9, the phrase "p-type diffusion region" is unclear whether it is being referred to "a p-type diffusion region"; line 11, the phrase "the surface region" has no antecedent basis; line 13, the phrase "the p-type impurity diffusion layer" has no antecedent basis. Claim 22, lines 5, 7, the phrase "the surface" is unclear whether it is being referred to "the surface region" of claim 19. Appropriate correction is required.

Art Unit: 2811

2. Claims 11-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11, lines 5-6, the phrase “doping p-type impurity ions into the entire surface region of the silicon semiconductor region” is vague and indefinite. Fig. 3E discloses only portions of the silicon semiconductor region [13] are doped with p-type impurity ions. The p-type ions are then activated to form the p-type impurity diffusion layer. Therefore, it is believed that the phrase should rewrite as “doping p-type impurity ions into portions of a surface region of the silicon semiconductor region”.

Claim 11, lines 12-13, the phrase “the p-type impurity diffusion layer is formed after formation of the Ni silicide film” is vague and indefinite. Figs. 3E and 3F disclose the p-type impurity diffusion layer is formed before the formation of the Ni silicide film. Therefore, it is believed that the phrase should rewrite as “the p-type impurity diffusion layer is formed before formation of the Ni silicide film”.

Claim 11, lines 14-15, the phrase “a concentration” is unclear as to what concentration is it being referred to. Is it being referred to “a concentration of the p-type impurity diffusion layer”?

Claim 15, lines 3-4, the phrase “doping p-type impurity ions into an entire surface region of a p-type silicon semiconductor region” is vague and indefinite. Fig. 3E discloses only portions of the silicon semiconductor region [13] are doped with p-type impurity ions. The p-type ions are then activated to form the p-type impurity diffusion

Art Unit: 2811

layer. Therefore, it is believed that the phrase should rewrite as “doping p-type impurity ions into portions of a surface region of a p-type silicon semiconductor region”.

Claim 15, lines 12-13, the phrase “the p-type impurity diffusion layer is formed after formation of the Ni silicide film” is vague and indefinite. Figs. 3E and 3F disclose the p-type impurity diffusion layer is formed before the formation of the Ni silicide film.

Therefore, it is believed that the phrase should rewrite as “the p-type impurity diffusion layer is formed before formation of the Ni silicide film”.

Claim 15, lines 14-15, the phrase “a concentration” is unclear as to what concentration is it being referred to. Is it being referred to “a concentration of the p-type impurity diffusion layer”?

Claim 18, lines 3-4, the phrase “forming a contact liner film on the entire surface on the entire surface after forming the Ni silicide film” is unclear whether it is being referred to “forming a contact liner film on the entire surface of the p-type silicon semiconductor region after forming the Ni silicide film”.

Claim 19, lines 7-8, the phrase “doping p-type impurity ions into an entire surface portion of the silicon semiconductor region” is vague and indefinite. Fig. 3E discloses only portions of the silicon semiconductor region [13] are doped with p-type impurity ions. The p-type ions are then activated to form the p-type diffusion region. Therefore, it is believed that the phrase should rewrite as “doping p-type impurity ions into portions of a surface region of the silicon semiconductor region”.

Claim 19, lines 13-14, the phrase “the p-type impurity diffusion layer is formed after formation of the Ni silicide film” is vague and indefinite. Figs. 3E and 3F disclose the p-

Art Unit: 2811

type diffusion region is formed before the formation of the Ni silicide film. Therefore, it is believed that the phrase should rewrite as "the p-type diffusion region is formed before formation of the Ni silicide film".

Claim 19, lines 15-16, the phrase "a concentration" is unclear as to what concentration is it being referred to. Is it being referred to "a concentration of the p-type diffusion region"?

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (571) 272-1657. The examiner can normally be reached on 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sl
February 20, 2006

Steven Loke
Primary Examiner
